

Title (en)
ULTRASONIC DIAGNOSTIC APPARATUS

Publication
EP 0087318 B1 19880203 (EN)

Application
EP 83300926 A 19830222

Priority
• JP 2864682 A 19820224
• JP 6521782 A 19820419

Abstract (en)
[origin: EP0087318A2] In an ultrasonic diagnostic apparatus using an array type transducer probe (21), an improvement can be made in a tomographic image resolution by electronically focusing ultrasonic wave toward an object to be examined in both directions, i.e., the array direction (Y) and the lens direction (X). During first scanning of the ultrasonic transducer array in the array direction (Y), the signals received from the probe (21) are synthesized each other via delay lines (241 to 245) having predetermined delay times to obtain first scanned signals in real time, so that focusing the reflected ultrasonic wave can be electronically accomplished in the array direction. After accomplishing this first scanning, the probe (21) is mechanically moved to a given position in the lens direction (X) normal to the array direction (Y). Then second scanning operation is accomplished at the above position in the array direction (Y), obtaining similarly first scanned signals. All of the first scanned signals are processed by a delay time control circuit (33) and then stored in the corresponding RAM's (311 to 31 N) respectively, after being converted into the digital signals. Finally, all of the stored first scanned signals are read out and synthesized each other by an adder circuit (34) to obtain second scanned signals, so that focusing the reflected ultrasonic wave can be accomplished in the lens direction (X). The resultant second scanned signals are converted into analogue signals to be displayed : as a tomographic image of the desired diagnostic part in the object.

IPC 1-7
G10K 11/34; **A61B 8/14**

IPC 8 full level
G01S 15/89 (2006.01); **G10K 11/34** (2006.01)

CPC (source: EP US)
G01S 15/8915 (2013.01 - EP US); **G01S 15/8945** (2013.01 - EP US); **G01S 15/8993** (2013.01 - EP US); **G10K 11/346** (2013.01 - EP US); **G01S 15/8902** (2013.01 - EP US)

Citation (examination)
• US 258574 A 18820530
• US 127034 A 18720521

Cited by
EP3018493A1; EP3144074A1; EP0237286A3; EP0421279A1; EP0744159A1; US5638821A; US10527592B2; US9116225B2; EP2616835B1; EP2435849B1

Designated contracting state (EPC)
DE FR

DOCDB simple family (publication)
EP 0087318 A2 19830831; **EP 0087318 A3 19850508**; **EP 0087318 B1 19880203**; AU 1173783 A 19830901; AU 539425 B2 19840927; DE 3375614 D1 19880310; US 4542746 A 19850924

DOCDB simple family (application)
EP 83300926 A 19830222; AU 1173783 A 19830222; DE 3375614 T 19830222; US 46931583 A 19830224